

**SURVEY CONTROL** (SEE SHEETS C-101 THROUGH C-104 FOR SURVEY CONTROL MONUMENT LOCATIONS ON SITE)  
SCALE: 1" = 400'

**DAM NECK BEACH SURVEY BASELINE (2003)**

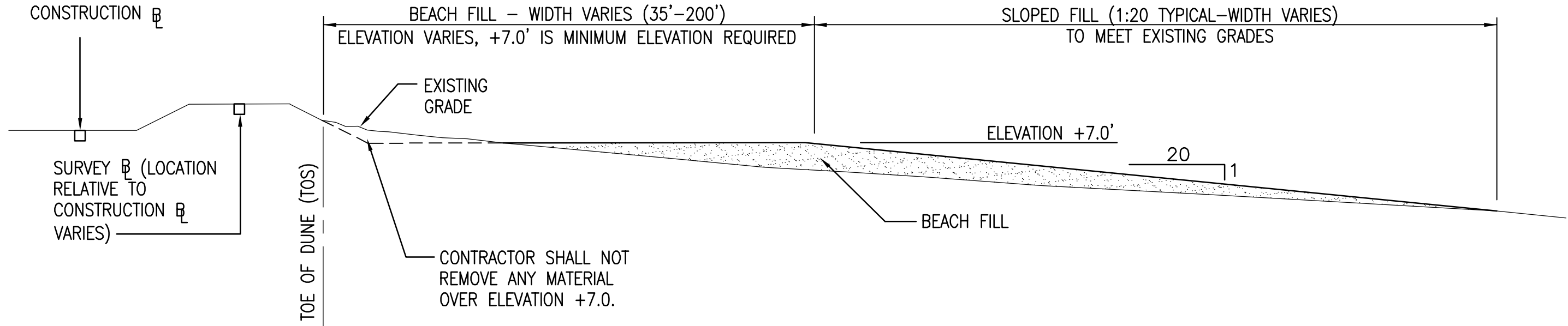
SURVEY CONTROL MONUMENT	DISTANCE (FT)	BEARING	COORDINATES			NOTES	CONSTRUCTION BASELINE	
			NORTHING	EASTING	ELEVATION (FT)		STATION	OFFSET (FT)
TR-28			3,464,125.691	12,224,922.334	27.48	PIN AND CAP	N/A	000.00 LT.
TR-27	996.24	S 13°47'32.9" E	3,463,158.177	12,225,159.844	25.15	PIN AND CAP	N/A	000.00 LT.
	1000.28	S 14°36'47.1" E						
TR-24			3,462,190.254	12,225,412.205	15.80	PIN AND CAP	0+00.00	267.98 LT.
	1000.19	S 12°51'39.5" E						
TR-25			3,461,215.154	12,225,634.834	20.26	PIN AND CAP	9+98.78	212.69 LT.
	999.08	S 14°22'21.6" E						
TR-26			3,460,247.342	12,225,882.834	18.50	PIN AND CAP	19+97.50	186.00 LT.
	1001.02	S 15°07'00.9" E						
TR-1			3,459,280.968	12,226,143.888	18.48	PIN AND CAP	29+98.42	172.25 LT.
	999.65	S 14°43'04.3" E						
TR-3			3,458,314.122	12,226,397.857	14.63	PIN AND CAP	39+97.85	151.56 LT.
	1022.33	S 15°47'26.4" E						
TR-5			3,457,330.360	12,226,676.060	21.95	PIN AND CAP	50+20.20	149.55 LT.
	977.18	S 16°40'08.9" E						
TR-7			3,456,394.240	12,226,956.360	21.72	PIN AND CAP	59+97.29	162.60 LT.
	1092.10	S 12°17'46.2" E						
TR-9			3,455,327.190	12,227,188.940	22.17	PIN AND CAP	70+87.23	93.89 LT.
	916.92	S 16°40'20.1" E						
TR-11			3,454,448.820	12,227,452.000	22.24	PIN AND CAP	80+04.06	106.18 LT.
	995.94	S 16°42'42.7" E						
TR-13			3,453,494.950	12,227,738.390	22.86	PIN AND CAP	90+00.10	120.23 LT.
	1062.18	S 16°02'00.0" E						
TR-15			3,452474.090	12,228,031.760	22.77	PIN AND CAP	100+62.08	122.64 LT.
	939.98	S 17°14'33.7" E						
TR-17			3,451,576.350	12,228,310.390	16.63	PIN AND CAP	110+01.80	144.60 LT.
	996.92	S 16°47'1.5" E						
TR-19			3,450,621.900	12,228,598.260	18.90	PIN AND CAP	120+01.40	159.91 LT.
	999.74	S 17°06'20.6" E						
TR-20			3,449,666.385	12,228,892.319	18.14	PIN AND CAP	129+98.12	180.89 LT.
	999.90	S 17°54'48.8" E						
TR-21			3,448,714.955	12,229,199.871	19.22	PIN AND CAP	139+97.41	215.95 LT.
	1000.59	S 16°52'13.5" E						
TR-22			3,447,757.430	12,229,490.250	14.96	PIN AND CAP	149+97.86	232.84 LT.
	998.34	S 18°8'41.8" E						
TR-23			3,446,808.735	12,229,801.155	17.29	PIN AND CAP	159+95.50	267.98 LT.

**GENERAL SURVEY NOTES**

- TOPOGRAPHIC SURVEY PREPARED BY TRANSYSTEMS CORPORATION, FROM FIELD DATA COLLECTED IN APRIL 2003. TOPOGRAPHIC INFORMATION SHOWN REFLECTS THE CONDITIONS AT THE TIME OF SURVEY. TOPOGRAPHY AND CONDITIONS MAY HAVE CHANGED SINCE THE SURVEY WAS CONDUCTED.
- THIS SURVEY DOES NOT GUARANTEE THE EXISTENCE OR NONEXISTENCE, SIZE, TYPE, DEPTH, MATERIAL OR LOCATION OF ANY UNDERGROUND UTILITIES. ALL UTILITIES SHOWN ARE BASED ON ABOVEGROUND UTILITY STRUCTURES, AVAILABLE UTILITY MAPS AND SITE PLANS. THE CONTRACTOR SHALL HAVE ALL EXISTING SITE UTILITIES VERIFIED PRIOR TO ANY EXCAVATION.
- TEMPORARY BENCHMARK #1 (TBM #1) IS A PIN & CAP (S) (TBM #1 ELEVATION = 27.48') TEMPORARY BENCHMARK #2 (TBM #2) IS A PIN & CAP (S) (TBM #2 ELEVATION = 22.24') TEMPORARY BENCHMARK #3 (TBM #3) IS A PIN & CAP (S) (TBM #3 ELEVATION = 17.29')
- ELEVATIONS SHOWN HEREON ARE IN FEET AND REFER TO THE CITY OF VIRGINIA BEACH 1929 DATUM. MEAN SEA LEVEL (MSL) = 0.00. ELEVATIONS WERE ESTABLISHED FROM CITY OF VIRGINIA BEACH CONTROL MONUMENT N-010.
- HORIZONTAL COORDINATES SHOWN HEREON ARE IN US SURVEY FEET AND REFER TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD83 (1986 ADJUSTMENT). HORIZONTAL COORDINATES WERE ESTABLISHED BY WATERWAY SURVEYS USING THE CITY OF VIRGINIA BEACH CONTROL MONUMENT N-010.

**LEGEND**

	EXISTING	NEW
BUILDING / STRUCTURE		
ASPHALT CONCRETE PAVEMENT		
MAJOR CONTOUR	--- (10.00) ---	
MINOR CONTOUR	--- (12.00) ---	7.00
TOP OF BANK	--- TOB ---	
TOE OF SLOPE	--- TOS ---	
SPOT ELEVATION	+100.00	
DUNE	---	
BEACH FILL AREA		
FENCE	--- X X ---	
SURVEY BASELINE	---	---
CONSTRUCTION BASELINE		---
MEAN HIGH WATER (MHW)	---	
MEAN LOW WATER (MLW)	---	
BENCHMARK		
SURVEY CONTROL POINT		
SOIL BORING		SB#11

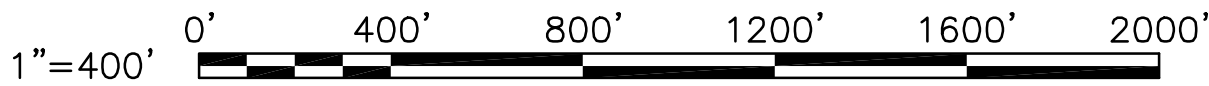


**TYPICAL RENOURISHMENT SECTION - STATION 20+00 TO STATION 113+00**

NOT TO SCALE

**GRAPHIC SCALE**

IF THIS SHEET IS LESS THAN 22" X 33", IT IS A REDUCED SIZE DRAWING.



DATE

APPR

DESCRIPTION

SYN

**TRANSYSTEMS CORPORATION**  
Town Point Center  
150 Boush Street ~ Suite 1000  
Norfolk ~ Virginia ~ USA  
23510-1538  
Phone 757-627-1112  
Fax 757-627-1113  
www.transystems.com

COMMONWEALTH OF VIRGINIA

KENNETH B. THORNTON

No.11214

7-11-2003

PROFESSIONAL ENGINEER

SEAL

APPROVED

ACTIVITY - SATISFACTORY TO

DATE

APPROVED

FOR EFD FOR COMMANDER NAVFAC

DATE

A/E

MWB

RSP

KBT

RMS

GOS

DESIGN

DRAWN

REVIEW

QC

CHIEF ARCH/ ENGR.

PROJECT MANAGER

FIRE PROTECTION

BRANCH MANAGER

DESIGN DIRECTOR

NAVAL FACILITIES ENGINEERING COMMAND

ATLANTIC DIVISION

NAVAL STATION

NAVAL AIR STATION, OCEANA ANNEX, DAM NECK

VIRGINIA BEACH, VIRGINIA

**REPAIR SHORE PROTECTION SYSTEM**

PROJECT CONTROL, LEGEND AND NOTES

CODE ID. NO. 80091

SIZE

D

SCALE: AS NOTED

EFD NO.

STA. PROJ. NO.

SPEC. NO. 05-02-2098

CONSTR. CONTR. NO.

N62470-02-B-2098

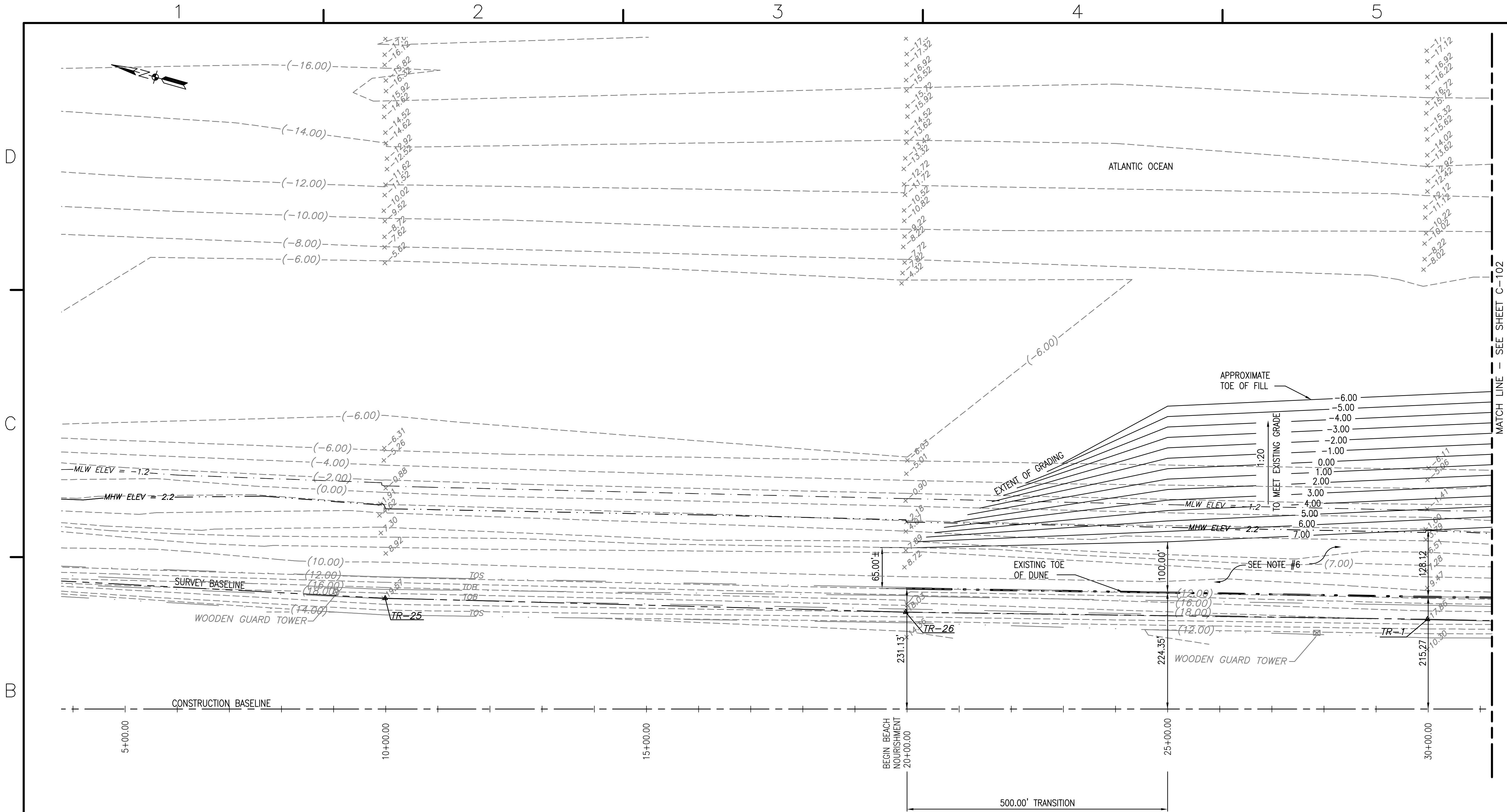
NAVFAC DRAWING NO.

4497560

SHEET 2 OF 9

**C-001**

DRAWING REVISION SEPT 2001



BEACH NOURISHMENT PLAN

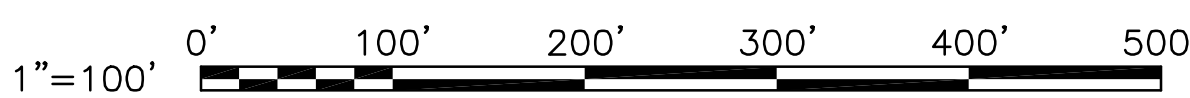
SCALE: 1" = 100'

SHEET NOTES

- SEE SHEET C-001 FOR PROJECT CONTROL DATA.
- THE CONTRACTOR SHALL CONFINE HIS WORK TO THE LIMIT OF CONTRACT AREA AVAILABLE (OCEANWARD OF THE CONSTRUCTION BASELINE AND BETWEEN NORTH/SOUTH LIMITS OF THE CONTRACT). THIS AREA DOES NOT GENERALLY INCLUDE ACCESS.
- THE CONTRACTOR SHALL COORDINATE ACCESS TO THE WORK AREA LOCATIONS WITH THE CONTRACTING OFFICER. THE CONTRACTOR SHALL RESTORE THE ACCESS AREA TO THEIR ORIGINAL CONDITION AFTER WORK IN THE AREA IS COMPLETE. THIS WORK INCLUDES REPLACEMENT OF FENCING, SIGNAGE AND OTHER MISCELLANEOUS ITEMS THAT MIGHT BE REMOVED.
- ANY EXISTING SIGNS, FENCES OR OTHER STRUCTURES WITHIN THE WORK LIMITS SHALL BE PROTECTED AND/OR REMOVED AND LATER REPLACED BY THE CONTRACTOR AS DIRECTED.
- FOR CONSTRUCTION BASELINE CROSS-SECTIONS, SEE SHEETS C-301 AND C-302.
- EXISTING GRADES OCEANWARD OF THE EXISTING TOE OF DUNE MAY BE ABOVE ELEVATION +7.0'. PROVIDE BEACH FILL IN THE LOW SPOTS TO BRING GRADES IN THIS AREA TO A MINIMUM ELEVATION OF +7.0'.
- SEE SHEET C-001 FOR TYPICAL BEACH RENOURISHMENT SECTION.

GRAPHIC SCALE

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COMMONWEALTH OF VIRGINIA

KENNETH B. THORNTON  
No. 11214  
7-11-2003  
PROFESSIONAL ENGINEER

APPROVED

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7/22/03

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MWB

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REVIEW

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CHIEF ARCH/ ENGR.

PROJECT MANAGER

FIRE PROTECTION

BRANCH MANAGER

DESIGN DIRECTOR

DEPARTMENT OF THE NAVY

NAVAL FACILITIES ENGINEERING COMMAND

ATLANTIC DIVISION

NAVAL STATION

NAVAL AIR STATION, OCEANA ANNEX, DAM NECK

VIRGINIA BEACH, VIRGINIA

REPAIR SHORE PROTECTION SYSTEM

BEACH NOURISHMENT PLAN

CODE ID. NO. B0091

SIZE

D

SCALE: 1"=100'

EFD NO.

STA. PROJ. NO.

SPEC. NO. 05-02-2098

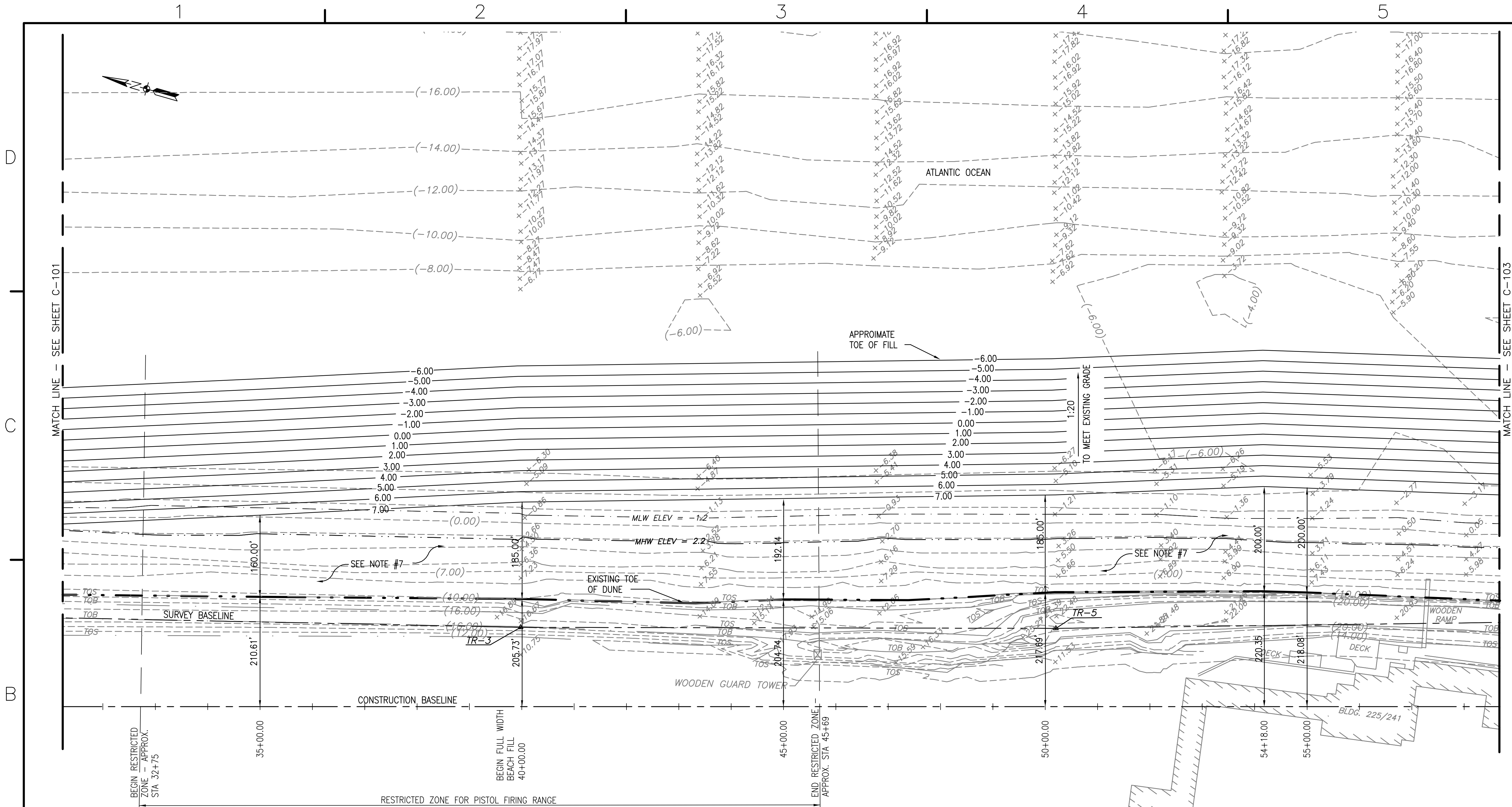
CONSTR. CONTR. NO. N62470-02-B-2098

NAVFAC DRAWING NO. 4497561

SHEET 3 OF 9

C-101

DRAWFORM REVISION SEPT 2001



# BEACH NOURISHMENT PLAN

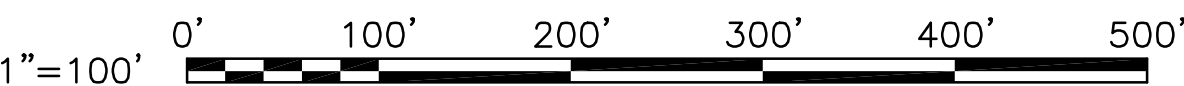
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## SHEET NOTES

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- SEE SPECIFICATIONS SECTION 01140N FOR WORK RESTRICTIONS WITHIN RESTRICTED AREA.
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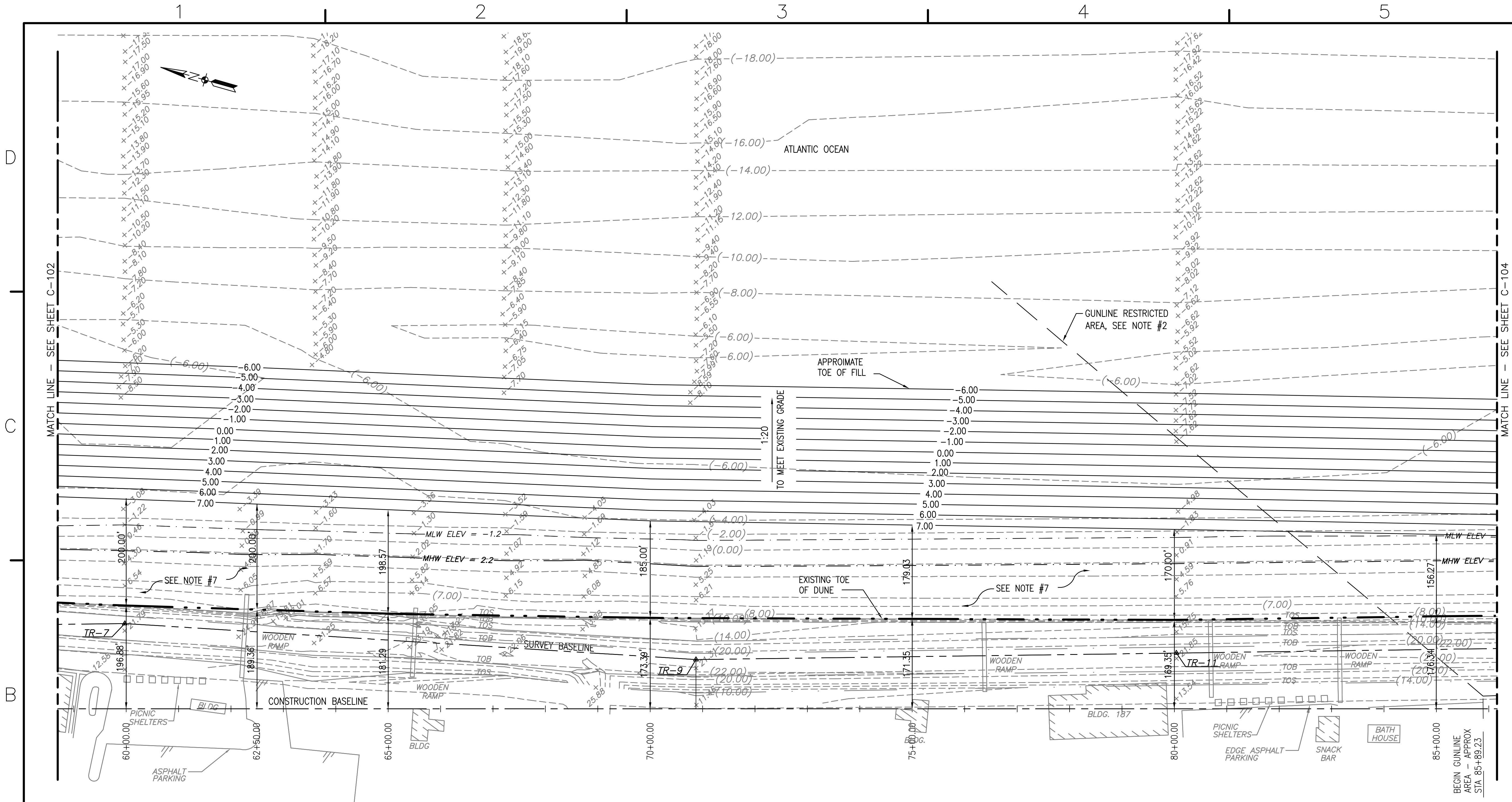
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<b>COMMONWEALTH OF VIRGINIA</b> KENNETH B. THORNTON No. 11214 7-11-2003 PROFESSIONAL ENGINEER SEAL	
APPROVED	
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APPROVED J. Bowen FOR EFD FOR COMMANDER NAVFAC 7/22/03	
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A/E	DESIGN
MWB	RSP
KBT	REVIEW
RMS	QC
GOS	CHIEF ARCH/ ENGR.
PROJECT MANAGER	
FIRE PROTECTION	
BRANCH MANAGER	
DESIGN DIRECTOR	
NAVAL FACILITIES ENGINEERING COMMAND	
ATLANTIC DIVISION	
NAVAL STATION	
NAVAL AIR STATION, OCEANA ANNEX, DAM NECK VIRGINIA BEACH, VIRGINIA	
REPAIR SHORE PROTECTION SYSTEM	
BEACH NOURISHMENT PLAN	
CODE ID. NO. 80091	SIZE D
SCALE: 1"=100'	
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SPEC. NO. 05-02-2098	
CONSTR. CONTR. NO.	
N62470-02-B-2098	
NAVFAC DRAWING NO.	
4497562	
SHEET 4	OF 9
C-102	
DRAWING REVISION SEPT 2001	





# BEACH NOURISHMENT PLAN

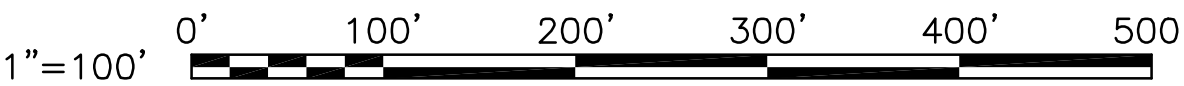
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## SHEET NOTES

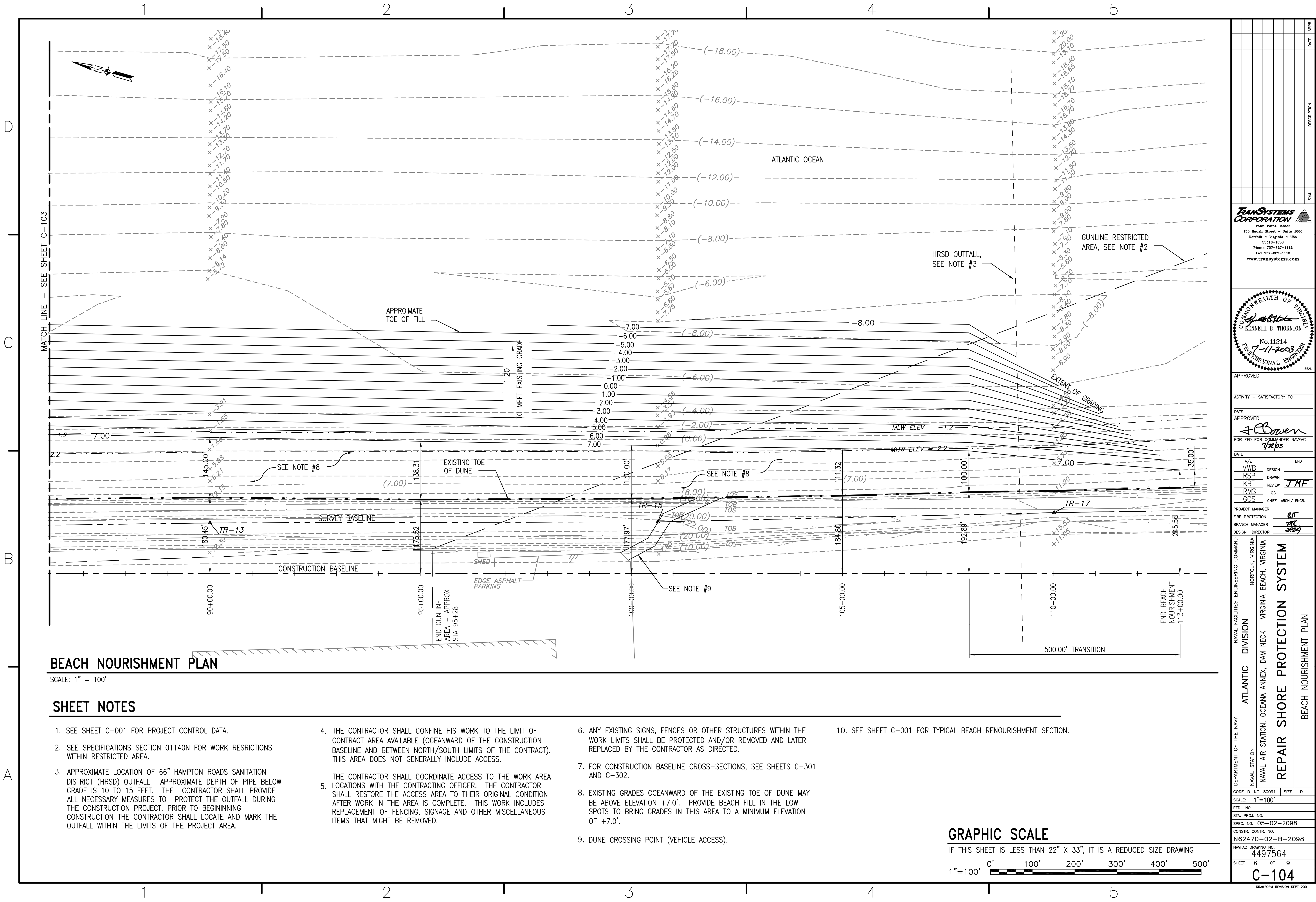
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- SEE SHEET C-001 FOR TYPICAL BEACH RENOURISHMENT SECTION.

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TRANSYSTEMS CORPORATION			
Town Point Center 150 Boush Street - Suite 1000 Norfolk - Virginia - USA 28510-1888 Phone 757-627-1112 Fax 757-627-1113 www.transystems.com			
COMMONWEALTH OF VIRGINIA			
KENNETH B. THORNTON			
No. 11214			
7-11-2003			
PROFESSIONAL ENGINEER			
SEAL			
APPROVED			
ACTIVITY - SATISFACTORY TO			
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APPROVED			
FOR EFD FOR COMMANDER NAVFAC			
7/22/03			
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A/E			
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DRAWN			
REVIEW			
JMF			
QC			
CHIEF ARCH/ ENGR.			
PROJECT MANAGER			
FIRE PROTECTION			
BRANCH MANAGER			
DESIGN DIRECTOR			
NAVAL FACILITIES ENGINEERING COMMAND			
ATLANTIC DIVISION			
NAVAL STATION			
NAVAL AIR STATION, OCEANA ANNEX, DAM NECK			
VIRGINIA BEACH, VIRGINIA			
REPAIR SHORE PROTECTION SYSTEM			
BEACH NOURISHMENT PLAN			
CODE ID. NO. B0091			
SIZE D			
SCALE: 1"=100'			
EFD NO.			
STA. PROJ. NO.			
SPEC. NO. 05-02-2098			
CONSTR. CONTR. NO.			
N62470-02-B-2098			
NAVFAC DRAWING NO.			
4497563			
SHEET 5 OF 9			
C-103			
DRAWING REVISION SEPT 2001			



BEACH NOURISHMENT PLAN

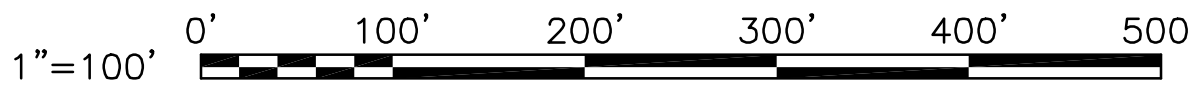
SCALE: 1" = 100'

SHEET NOTES

1. SEE SHEET C-001 FOR PROJECT CONTROL DATA.
2. SEE SPECIFICATIONS SECTION 01140N FOR WORK RESTRICTIONS WITHIN RESTRICTED AREA.
3. APPROXIMATE LOCATION OF 66" HAMPTON ROADS SANITATION DISTRICT (HRSD) OUTFALL. APPROXIMATE DEPTH OF PIPE BELOW GRADE IS 10 TO 15 FEET. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PROTECT THE OUTFALL DURING THE CONSTRUCTION PROJECT. PRIOR TO BEGINNING CONSTRUCTION THE CONTRACTOR SHALL LOCATE AND MARK THE OUTFALL WITHIN THE LIMITS OF THE PROJECT AREA.
4. THE CONTRACTOR SHALL CONFINED HIS WORK TO THE LIMIT OF CONTRACT AREA AVAILABLE (OCEANWARD OF THE CONSTRUCTION BASELINE AND BETWEEN NORTH/SOUTH LIMITS OF THE CONTRACT). THIS AREA DOES NOT GENERALLY INCLUDE ACCESS.
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7. FOR CONSTRUCTION BASELINE CROSS-SECTIONS, SEE SHEETS C-301 AND C-302.
8. EXISTING GRADES OCEANWARD OF THE EXISTING TOE OF DUNE MAY BE ABOVE ELEVATION +7.0'. PROVIDE BEACH FILL IN THE LOW SPOTS TO BRING GRADES IN THIS AREA TO A MINIMUM ELEVATION OF +7.0'.
9. DUNE CROSSING POINT (VEHICLE ACCESS).
10. SEE SHEET C-001 FOR TYPICAL BEACH RENOURISHMENT SECTION.

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COMMONWEALTH OF VIRGINIA  
KENNETH B. THORNTON  
No. 11214  
7-11-2003  
PROFESSIONAL ENGINEER

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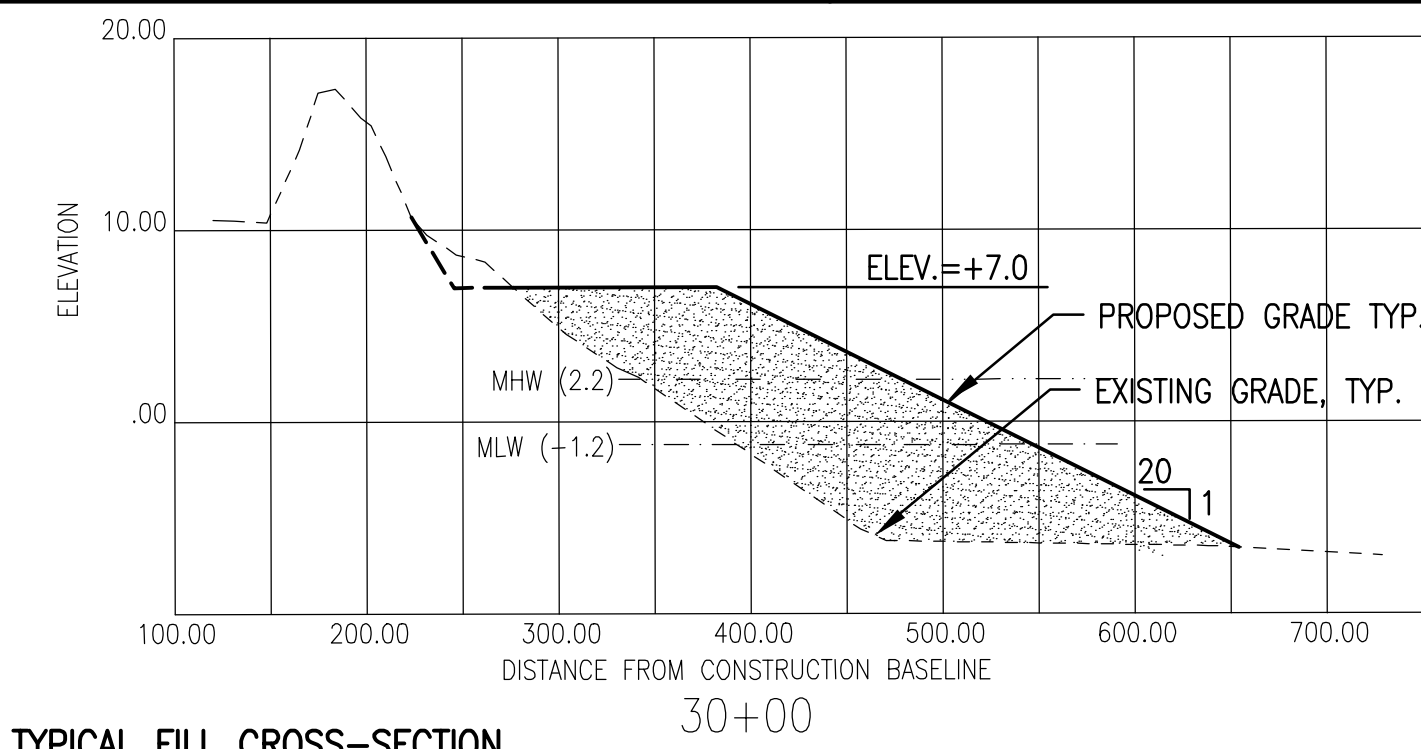
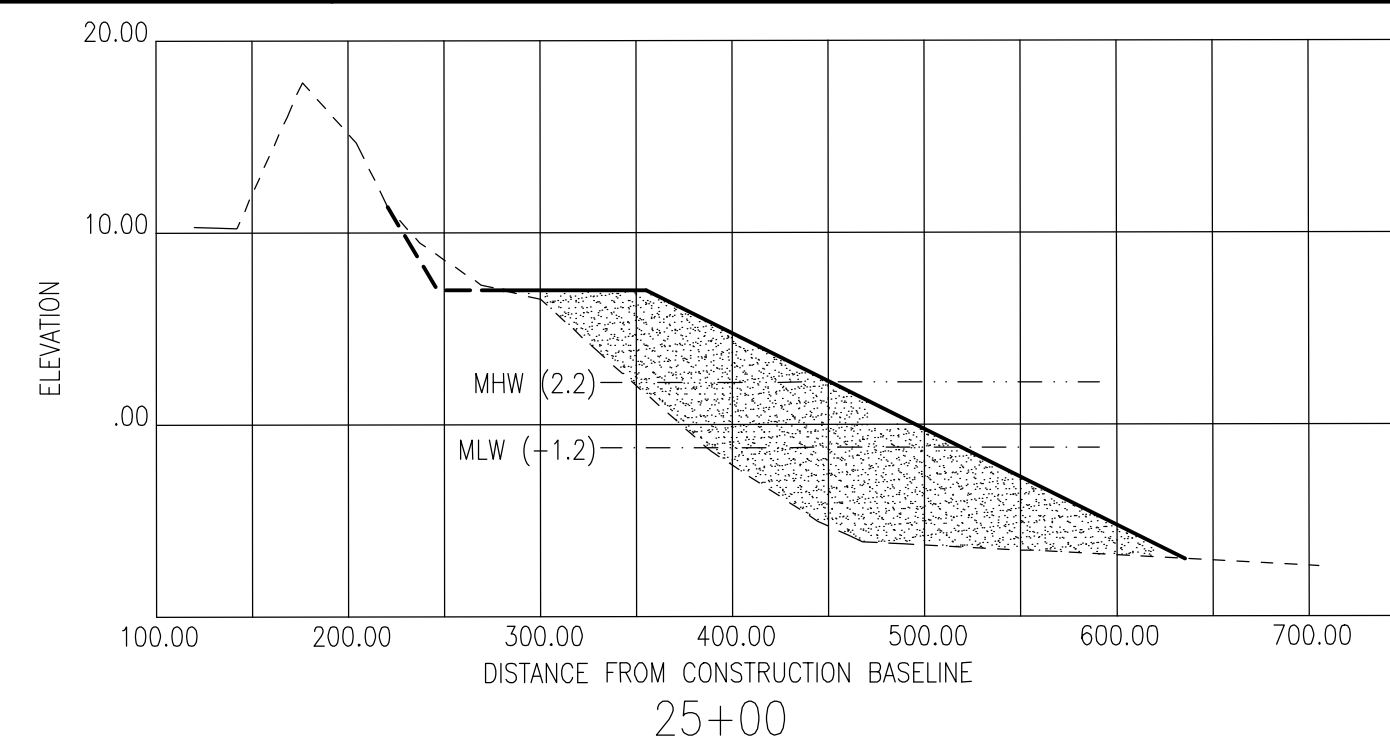
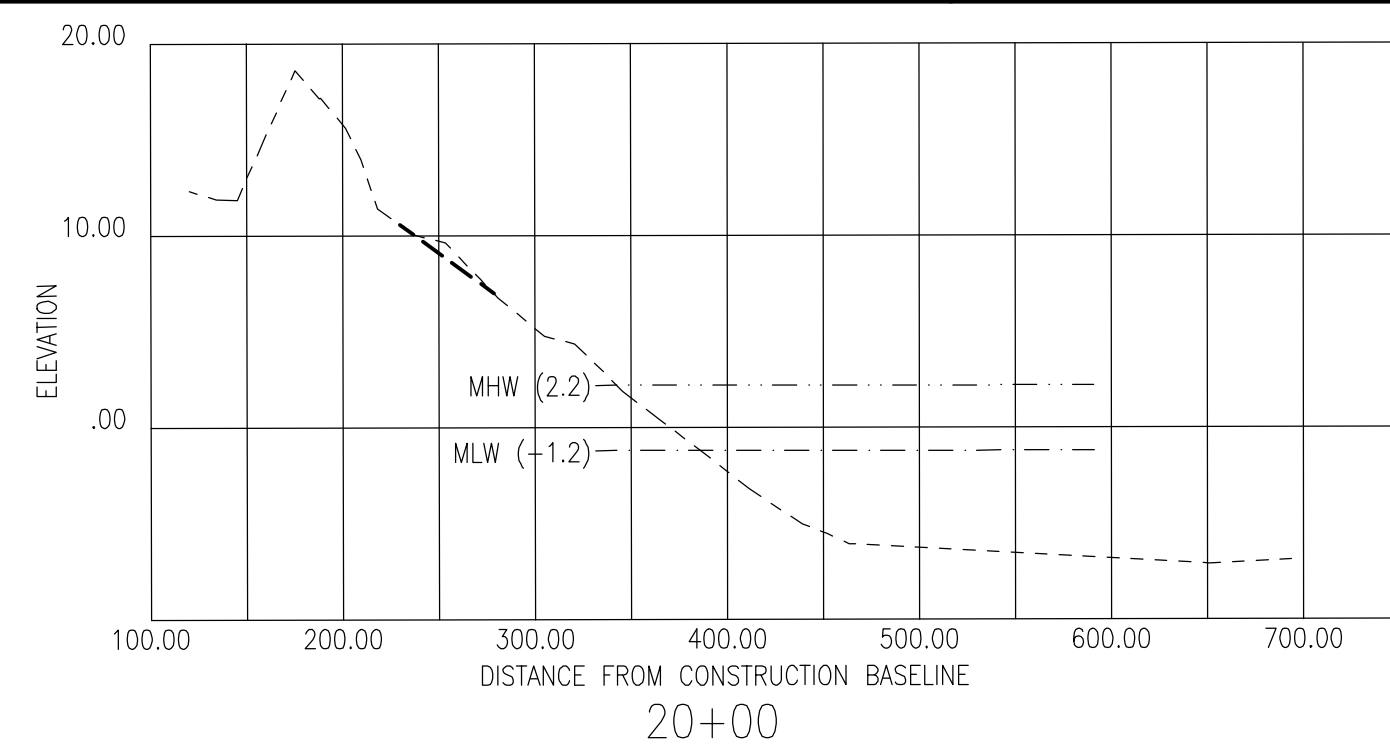
NAVAL FACILITIES ENGINEERING COMMAND  
ATLANTIC DIVISION  
NAVAL STATION  
NAVAL AIR STATION, OCEANA ANNEX, DAM NECK  
VIRGINIA BEACH, VIRGINIA  
REPAIR SHORE PROTECTION SYSTEM  
BEACH NOURISHMENT PLAN

CODE ID. NO. B0091  
EFD NO.  
STA. PROJ. NO.  
SPEC. NO. 05-02-2098  
CONSTR. CONTR. NO.  
NAVFAC DRAWING NO.  
SHEET 6 OF 9

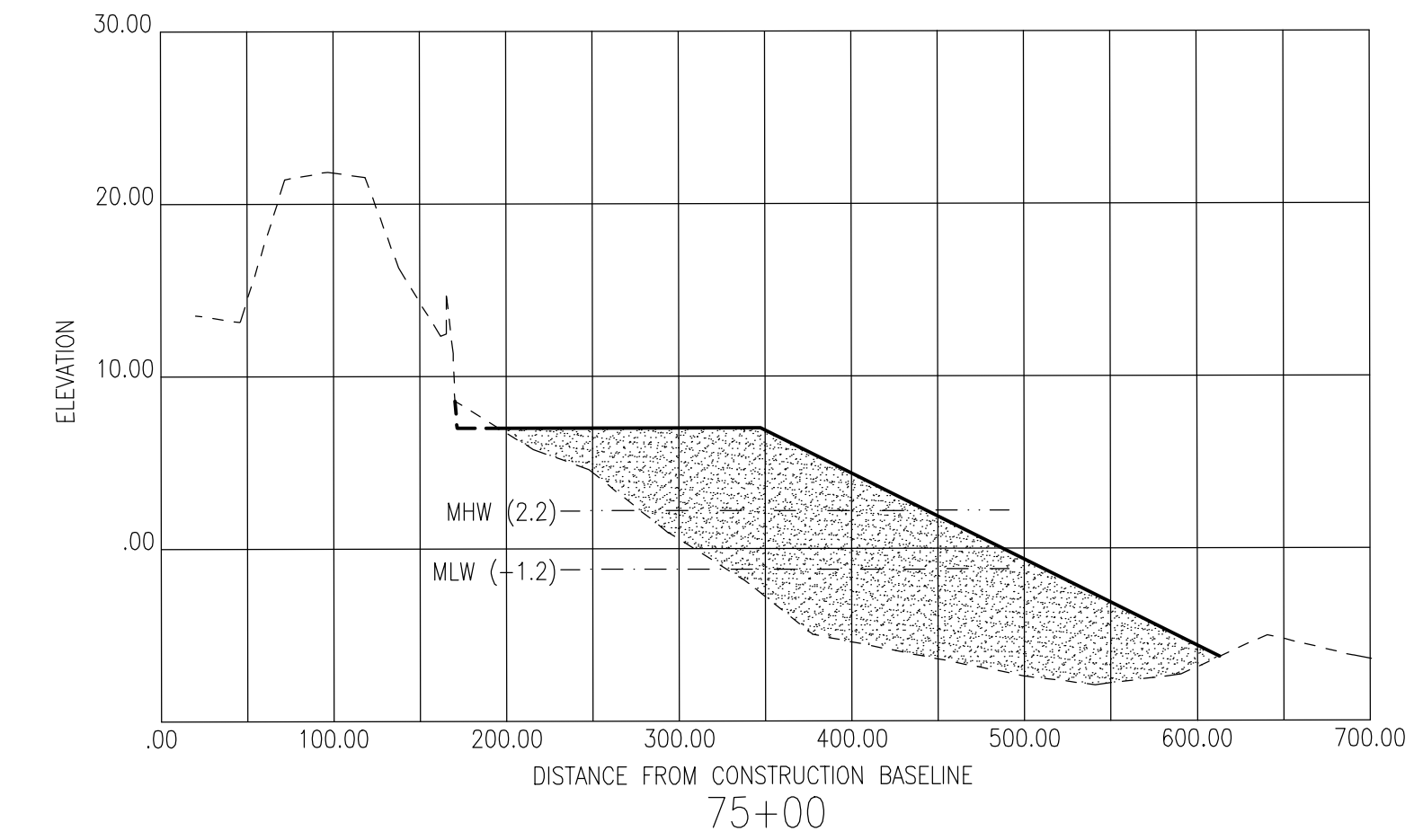
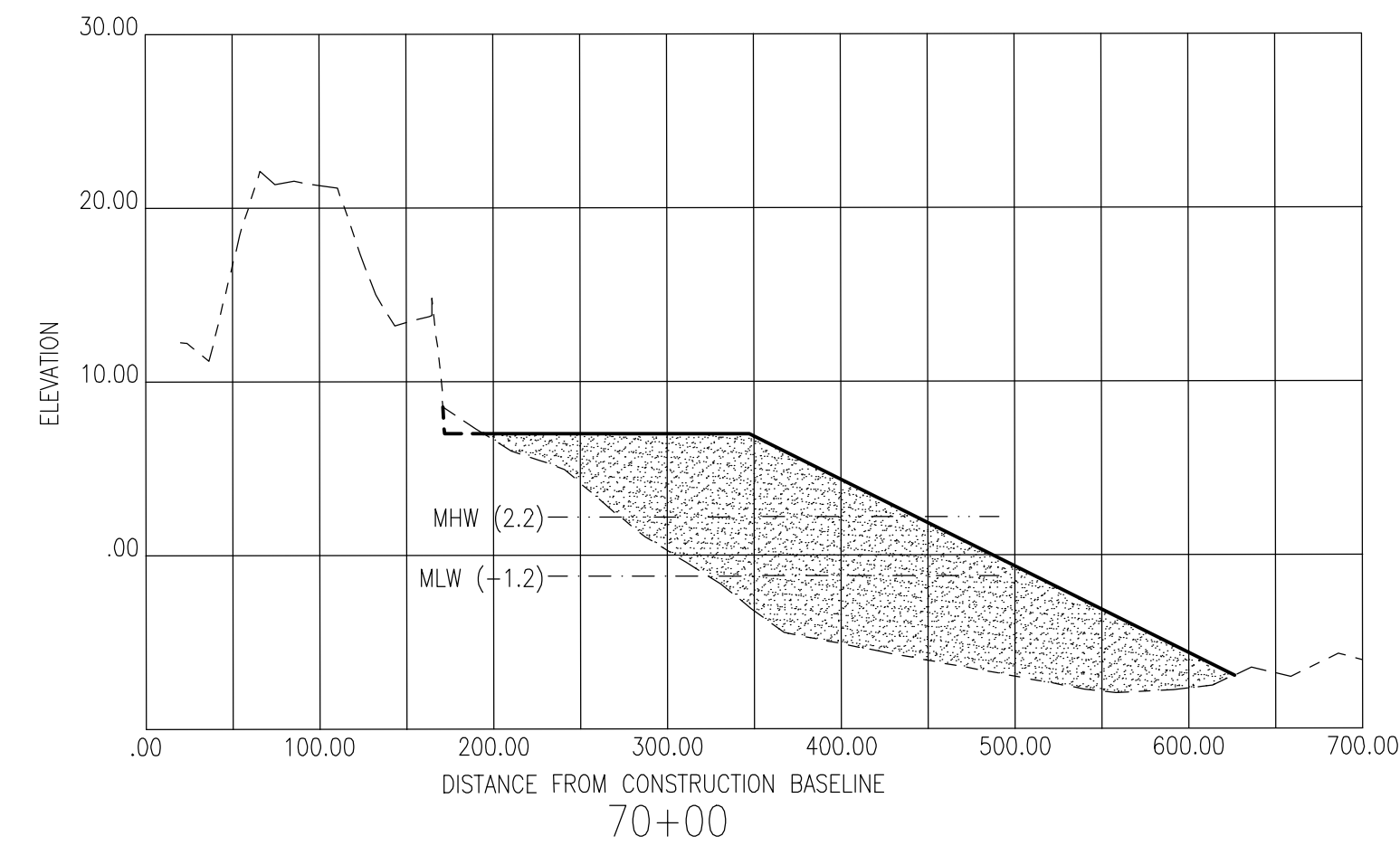
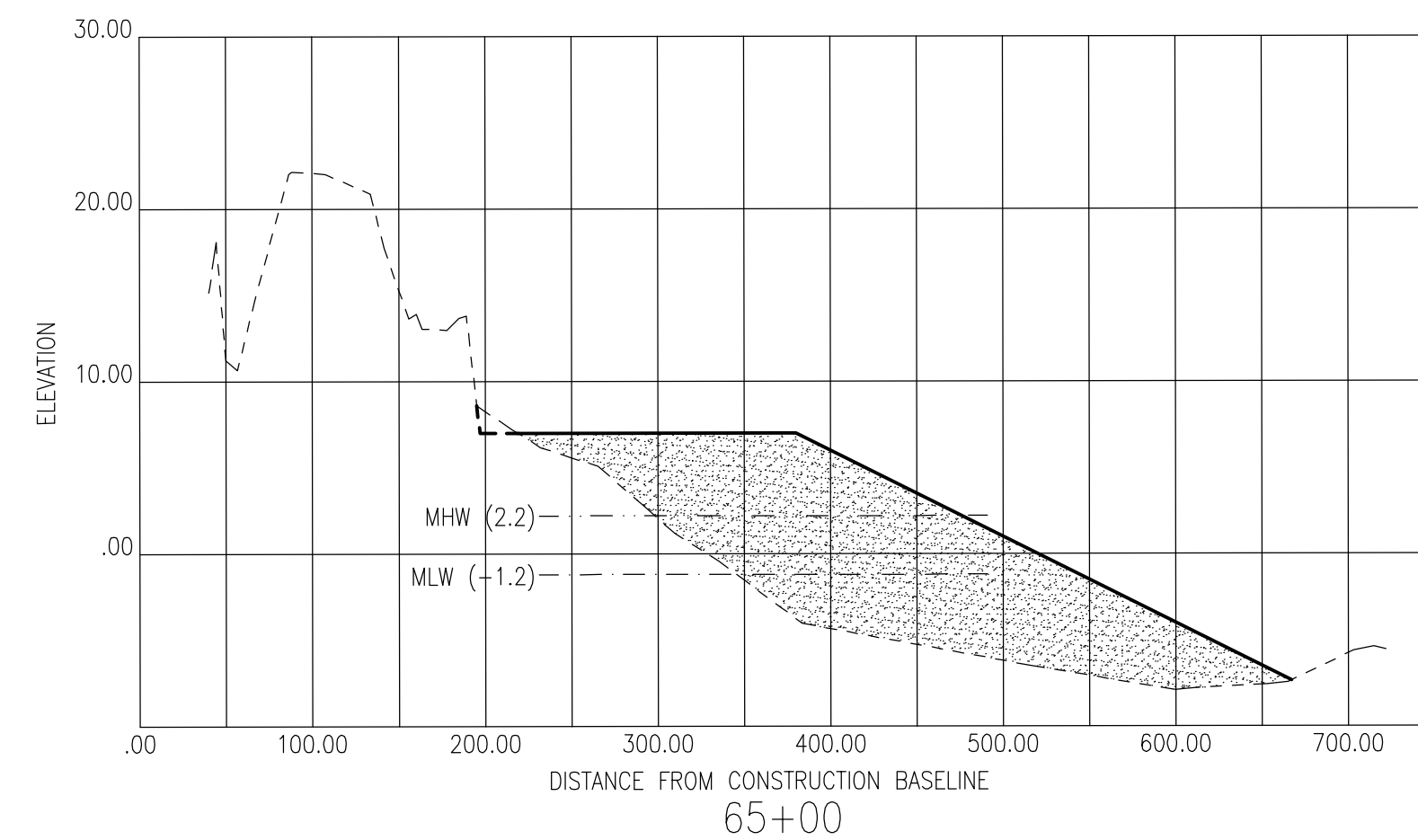
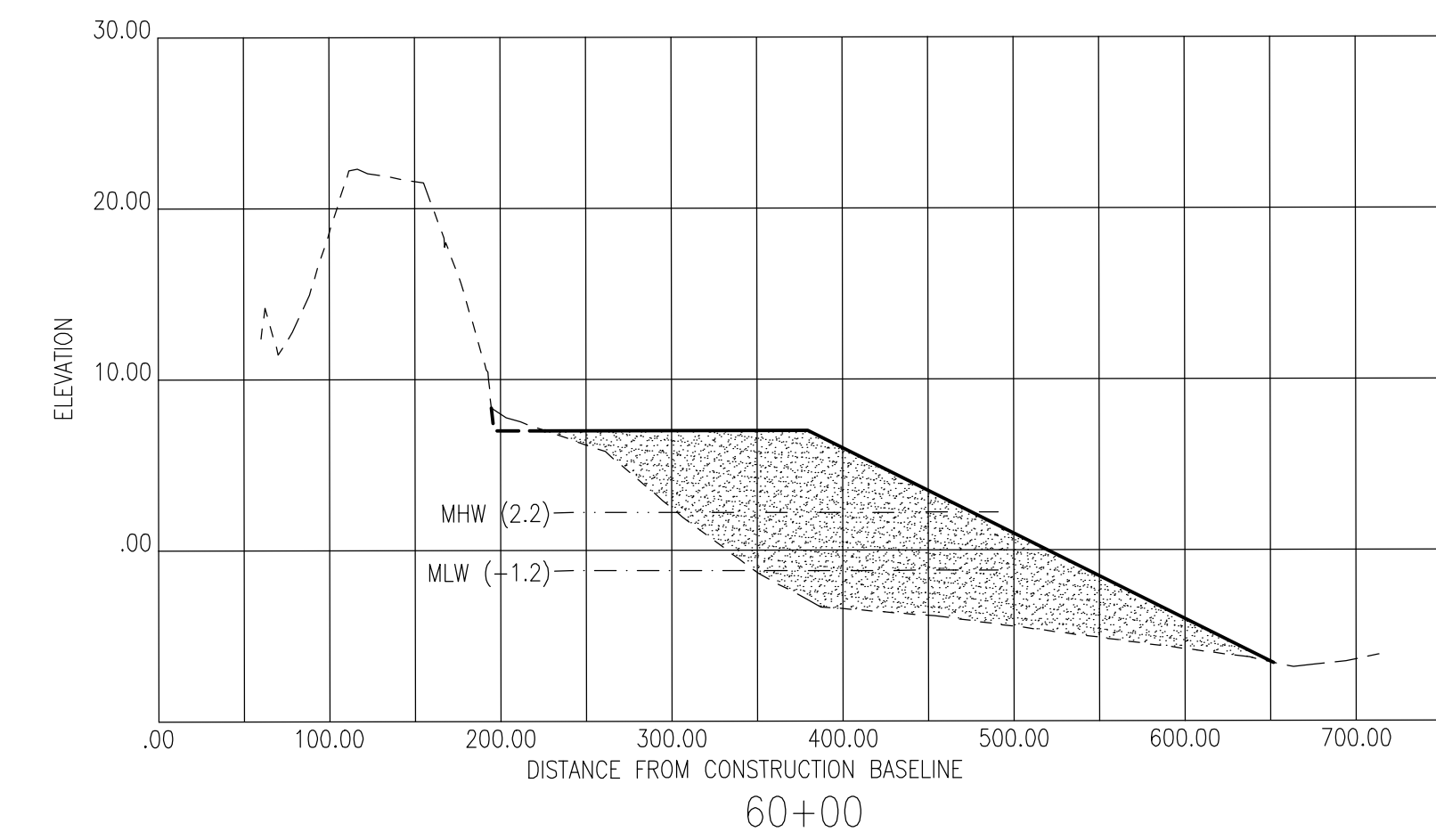
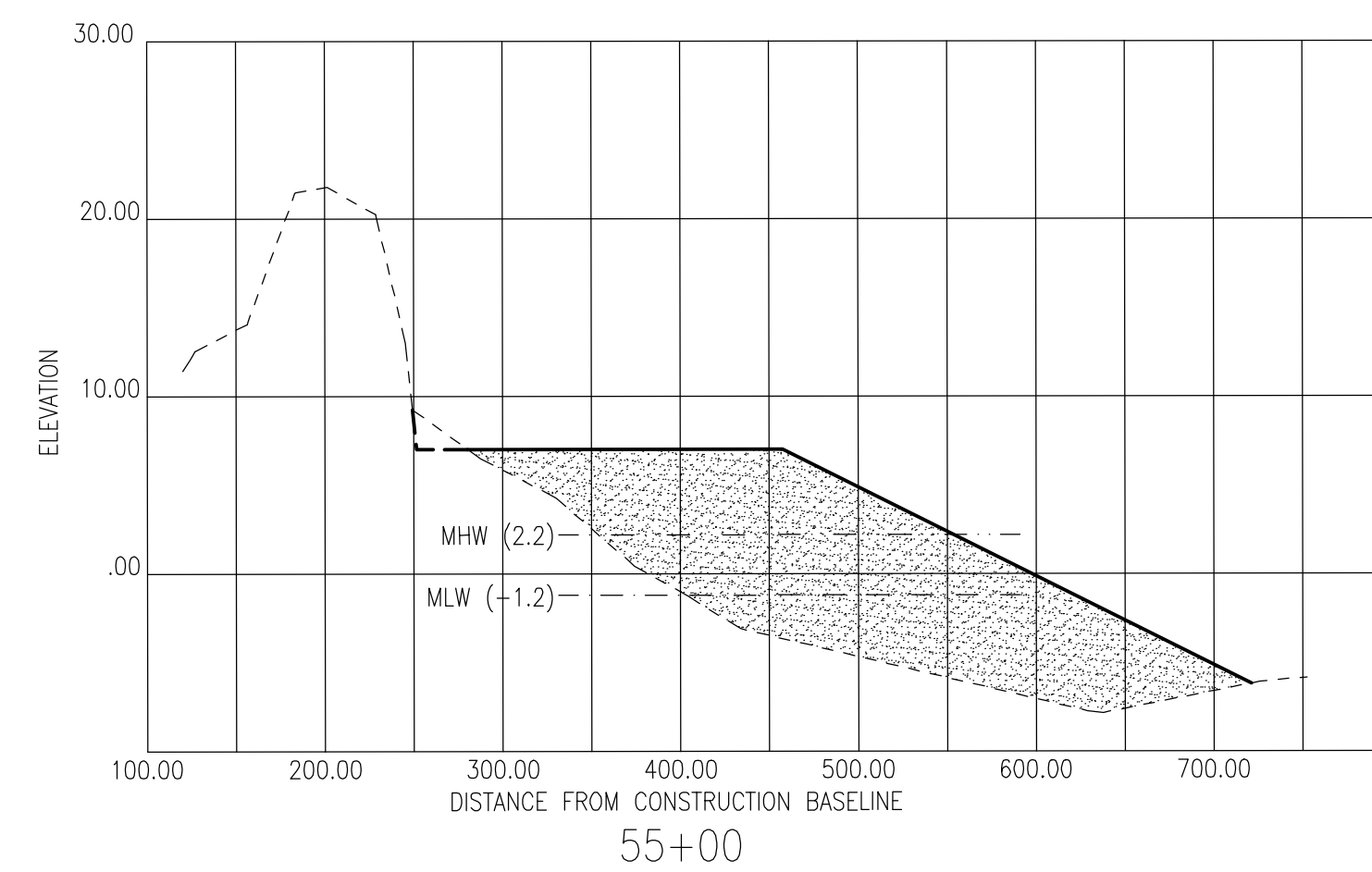
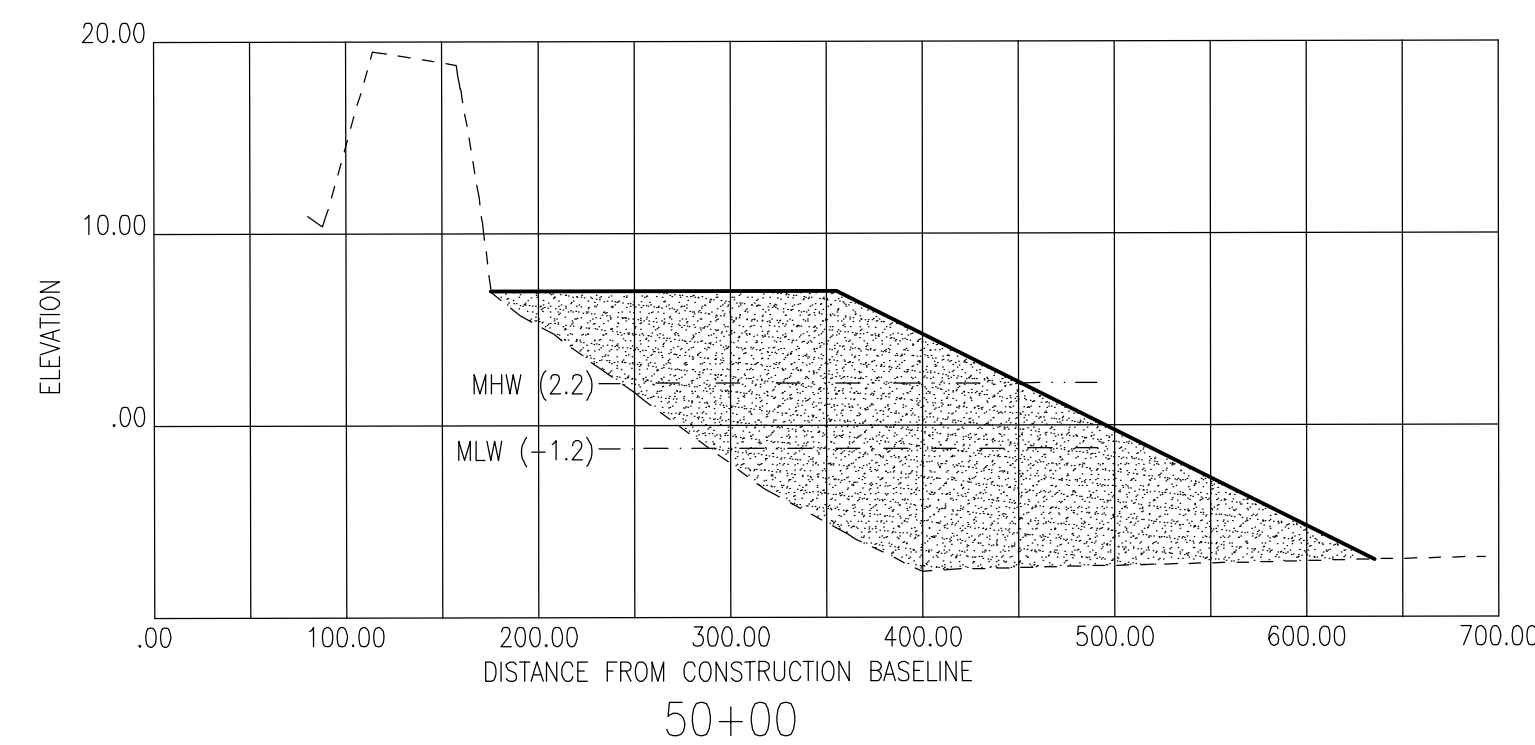
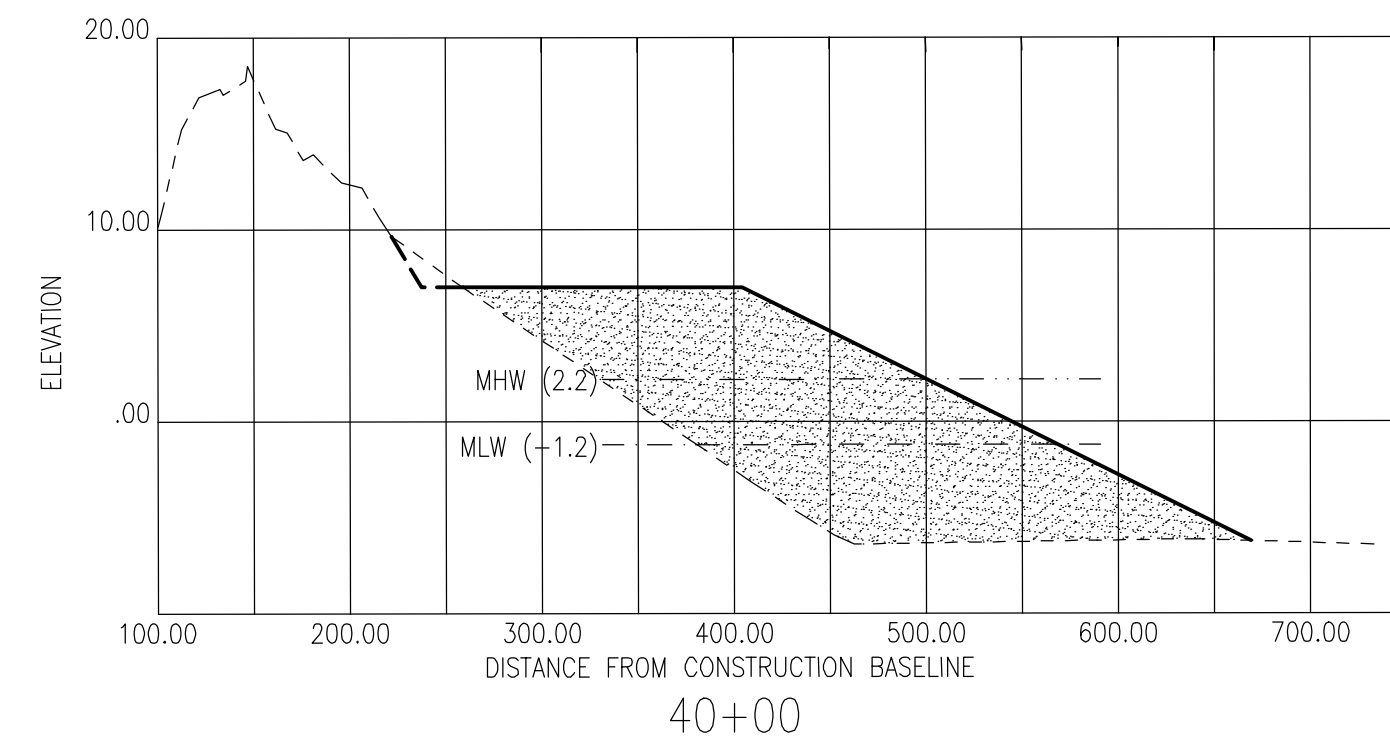
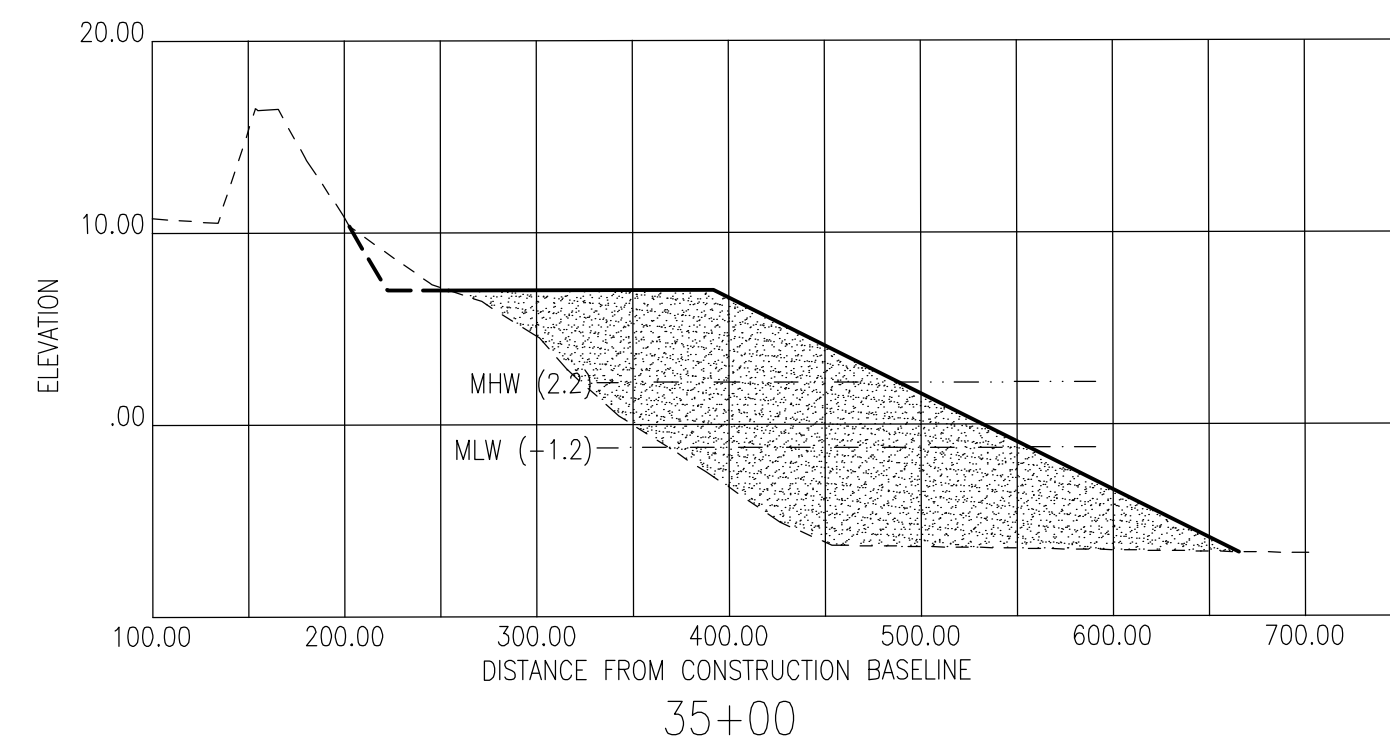
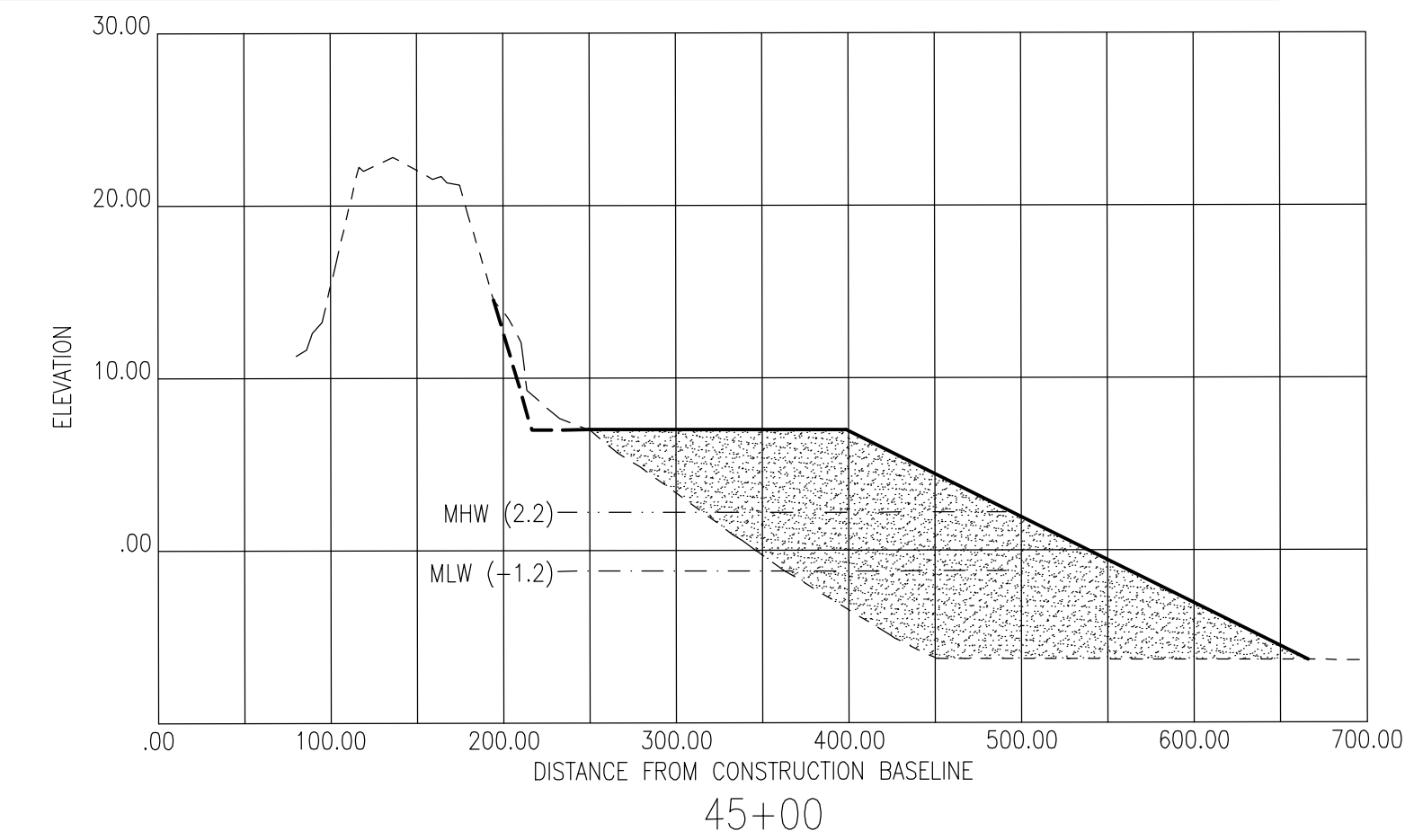
C-104  
DRAWNFORM REVISION SEPT 2001







### TYPICAL FILL CROSS-SECTION



GRAPHIC SCALE

IF THIS SHEET IS LESS THAN 22" X 33", IT IS A REDUCED SIZE

DRAWING HORIZ. 1" = 100'

HORIZ. 1"=100'



0' 10' 20' 30' 40' 50'

VERT. 1"=10' 

[illegible]



